The Role of Palliative Care Consultation in Withdrawal of Veno-Arterial Extracorporeal Membrane Oxygenation Support for Cardiogenic Shock

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# Purpose

- As the use of veno-arterial extracorporeal membrane oxygenation (VA-ECMO) support increases, more patients and their families will face the choice to withdraw. Few studies have evaluated the clinical context of this patient population.
- To evaluate the clinical characteristics of patients withdrawn from VA-ECMO and the role of palliative care (PC) consultation in the decision.

# Methods

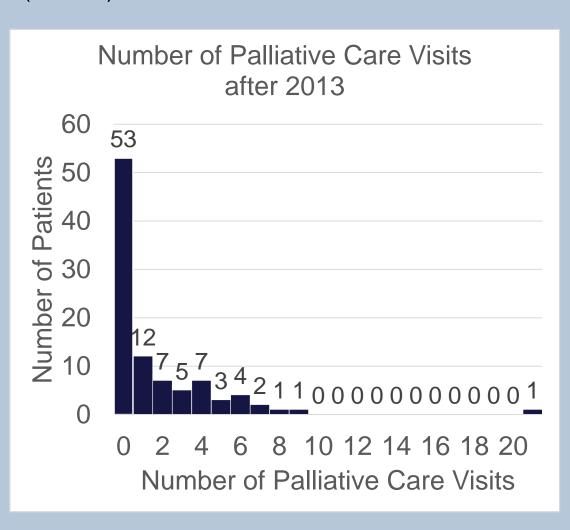
- We retrospectively reviewed the electronic medical records of adult patients with cardiogenic shock treated with VA-ECMO at our institution between March 1, 2007 and May 31, 2019 to determine those who died after VA-ECMO was withdrawn.
- Patients were excluded if they survived less than 2 hours on VA-ECMO, died more than 72 hours after withdrawal, or were diagnosed with brain death prior to withdrawal.
- Electronic medical records were reviewed for patient characteristics. The presence of anoxic brain injury was determined based on brain imaging reports or brainstem reflexes on physical exam within one week of death.

# Duration of ECMO and Palliative Care Visits 25 y = 0.2184x + 0.1845 R<sup>2</sup> = 0.2705 10 0.00 10.00 20.00 30.00 Duration of VA-EMCO (Days)

# Results

### **Clinical Characteristics**

- Of 643 Patients who received VA-ECMO, 127 patients (19.8%) were included in the analysis.
- The etiology for VA-ECMO initiation included acute decompensated heart failure (11.8%), acute myocardial infarction (22.0%), ECPR (4.7%), post-cardiotomy shock (34.6%), and others (26.8%).
- The median time on VA-ECMO was 3.6 days, and most patients had at least one other form of life support, including continuous renal replacement therapy (64.6%), mechanical ventilation (97.6%), and intra-aortic balloon pump or Impella (47.2%).



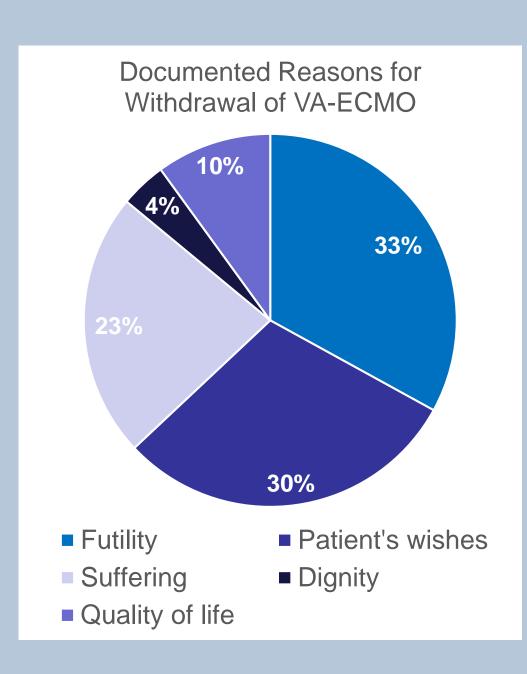
### **Palliative Care Consultation**

- After 2013, 43 patients (44.8%) had a PC consult with a median of 4 days from initial consultation to withdrawal.
- At the time of withdrawal, 31 (24.4%) had clinical and/or radiologic evidence of anoxic brain injury, and this influenced number of life support measures, length of time on VA-ECMO, and number of PC visits (Wilks lambda 0.8926, DF 5,121, p = 0.016).
- The length of time on VA-ECMO correlated with increased number of PC visits (r=0.525, p=0.001).
- Further, presence of anoxic brain injury was associated with decreased number of PC visits (t=2.73, p=0.007).

## Results

### **Reason for Withdrawal**

- Only 1 patient had capacity to request withdrawal, and 1 patient had no surrogate requiring a legal guardian to be designated.
- The surrogate decision maker was a spouse or partner (44.1%), child (29.9%), parent (9.4%), sibling (7.9%), extended family member (4.7%), or friend (3.1%).
- Eighty-two (64.6%) had documented reasons for withdrawal of VA-ECMO.



# Conclusions

- Most patients withdrawn from VA-ECMO did not have capacity to determine their end of life care. Number of PC visits may be a surrogate marker of the complexity of the decision to withdraw VA-ECMO.
- The longer the duration of VA-ECMO, the greater the number of PC visits patients received. Further, the presence of anoxic brain injury was associated with fewer PC visits, which may indicate a difference in the decision to withdraw in patients with poor neurological prognosis.